

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group I, claims 1-14 and 18-33 in the reply filed on 11/6/2009 is acknowledged. Applicant was correct in indicating that claim 14 is properly in claim 14.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 and 18-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant's claims appear to lack essential steps or at least fail to set forth the metes and bounds of the invention. The only active step in claim 1 is an expanding step wherein it would appear at the very least the invention would require an isolation step. Also the preamble of claim 1 requires differentiation but the claim has no differentiation step. Also, it would appear that the claims should include a step that involves either nodule formation or nodule culture.

Regarding independent claim 18, the claims again only require an expansion cell thus again neglecting any seemingly necessary differentiating and isolating steps.

Dependent claims do not remedy the problems of the independent claims as they tend to describe characteristics of the ES cells and culture but the culture of said cells is not an active step of applicant's invention.

The language of a claim must make it clear what subject matter the claim encompasses to adequately delineate its "metes and bounds". See, e.g., the following decisions: *In re Hammack*, 427 F.2d. 1378, 1382, 166 USPQ 204, 208 (CCPA 1970); *In re Venezia* 530 F.2d. 956, 958, 189 USPQ 149, 151 (CCPA 1976); *In re Goffe*, 526 F.2d. 1393, 1397, 188 USPQ 131, 135 (CCPA 1975); *In re Watson*, 517 F.2d. 465, 477, 186 USPQ 11, 20 (CCPA 1975); *In re Knowlton* 481 F.2d. 1357, 1366, 178 USPQ 486, 492 (CCPA 1973). The courts have also indicated that before claimed subject matter can properly be compared to the prior art, it is essential to know what the claims do in fact cover. See, e.g., the following decisions: *In re Steele*, 305 F.2d. 859, 134 USPQ 292 (CCPA 1962); *In re Moore* 439 F.2d. 1232, 169 USPQ 236 (CCPA 1969); *In re Merat*, 519 F.2d. 1390, 186 USPQ 471 (CCPA 1975).

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 1, 2, 3, 5-6, 14, 18, 19, 20-28 & 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bagutti et al (Developmental Biology 179).

Bagutti teaches isolating, culturing and expanding populations of keratinocytes which are differentiated from embryonic stem cells- the use of an intermediate "nodule" is taught. The reference anticipates the claim subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-14 and 18-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bagutti et al (as cited above) in view of Barrandon et al (PNAS 1987) or Coraux et al (Curr Biology 2003) or Pelligrini et al (PNAS 2001) and Watt et al (Nature 1982).

Bagutti teaches populations of keratinocytes which are differentiated from embryonic stem cells. The use of an intermediate "nodule" is taught. The reference is silent on the specific culture conditions currently claimed however the method claimed would have been obvious to one of ordinary skill in the art because Bagutti teaches the differentiating of ES cells into keratinocytes and the factors required to do so. The culture condition claimed are for the culture and expansion of keratinocytes and as such are notoriously old and well known in the art as evidenced by of Barrandon, Coraux et al, Pelligrini et al, and Watt et al. Applicant is directed to pages 12-13 of *KSR v Teleflex* (500 US 398 2007) " ... the Court has held that a "patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men." *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U. S. 147, 152 (1950). This is a principal reason for declining to allow patents for what is obvious. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." "When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either ***in the same field or a different one(emphasis added)***. If a person of ordinary skill can implement a predictable

variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." Clearly in the instant case the methods of culturing keratinocytes are well known in the art and as such would have been obviously applied to keratinocytes isolated from or differentiated from ES cells.

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) >see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.");< ** In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

Accordingly, the claimed invention was prima facie obvious to one of ordinary skill in the art at the time the invention was made especially in the absence of evidence

to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon B. Lankford whose telephone number is 571-272-0917. The examiner can normally be reached on Mon-Fri 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon B Lankford/
Primary Examiner, Art Unit 1651